CHANGE/ERRATA INFORMATION

ISSUE NO: 3 9/84

This change/errata contains information necessary to ensure the accuracy of the following manual. Enter the corrections in the manual if either one of the following conditions exist:

1. The revision letter stamped on the indicated PCB is equal to or higher than that given with each change.
2. No revision letter is indicated at the beginning of the change/errata.

MANUAL

Title: 8505A
Print Date: March 1983
Rev.- Date:

C/E PAGE EFFECTIVITY

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CHANGE #1 - 17562
Rev.-D, A6 Controller PCB Assembly (MIS-4187T)

```
ADD:      R15|RES,DEP.CAR, 6.2K +/-5%, 1/4W|442368|80031|CR251-4-5P6K2|1
```

CHANGE #2 - 17807
Rev.-E, A6 Controller PCB Assembly (MIS-4187T)

Change the TOT QTY of R3,
FROM: 3
TO: 2

```
DELETE:   R11|...

ADD:      L1|INDUCTOR, COIL 6-TURN|320911|89536|320911|1

ADD:      RN5|RESISTOR NETWORK, 2K, DIP|574905|89536|574905|1
```

CHANGE #3 - 18307
Rev.-F A6 Controller PCB Assembly (MIS-4187T)

```
CHANGE:   U5|IC,LSTTL,QUAD,1-INPUT NAND GATE |393033|04713|SN74LS00N|1|1
TO:       U5|IC,LSTTL,QUAD,2-IN POS-NAND SCMT TRG
                                          |504449|01295|SN74LS132N|1|1
```

CHANGE #4 - 18549
Rev.-G, A6 Controller PCB Assembly (MIS-4187T)

```
CHANGE:   U18|IC, TTL MULTIPLEXER|393165|01295|SN74LS139N|1|1
TO:       U18|IC, STTL, 256 X 4 BIT PROM W/TRISTATE
                              |722744|89536|722744|1

CHANGE:   U20|IC, NMOS, 512 X 8 BIT EEPROM|685545|60395|XD2804A|1|
TO:       U20|IC, NMOS, 512 X 8 BIT EEPROM|722348|89536|722348|1
```

CHANGE #5 - 19104
Rev.-H, A6 Controller PCB Assembly (MIS-4187T)

```
CHANGE:   C14|CAP, CER, 2700 PF, GMV, 600V
                                  |106211|51406|DD60B1025U272P1KV|1
TO:       C14|CAP, CER, 200NF +/-20%, 50V
                                 |573808|72892|8131-050-W5R100NFM|1
```

Change the TOT QTY of R1,
FROM: 2
TO: 1

```
CHANGE:   R10|RES, DEP. CAR, 100K +/-5%, 1/4W
                                 |348920|80031|CR251-4-5P100K|REF
TO:       R10|RES, DEP. CAR, 2.7K +/-5%, 1/4W
                                 |573261|80031|CR251-4-5P100K|1
```

Change the TOT QTY of U5,
FROM: 1
TO: 2

CHANGE: U27|IC,CMOS, QUAD 2-INPUT NAND GATE|404632|02735|CD4039BE|1|1
TO: U27|IC,LSTTL,QUAD,2-IN POS-NAND SCMT TRG
|504449|01295|SN74LS132N|REF

CHANGE #6 - 19170
Rev.-J, A6 Controller PCB Assembly (MIS-4187T)

ADD: U28|IC, TTL 8-BIT PARALLEL OUT SER SHIFT REG
|408732|01295|SN74LS164N|1|1

On page 5-20, Figure 5-7, and page 8-16, Figure 8-6, replace the A6 reference designator drawing with Figure 1.

On pages 8-17/8-18 and 8-19, Figure 8-6, replace the A6 schematic drawing with Figure 2.

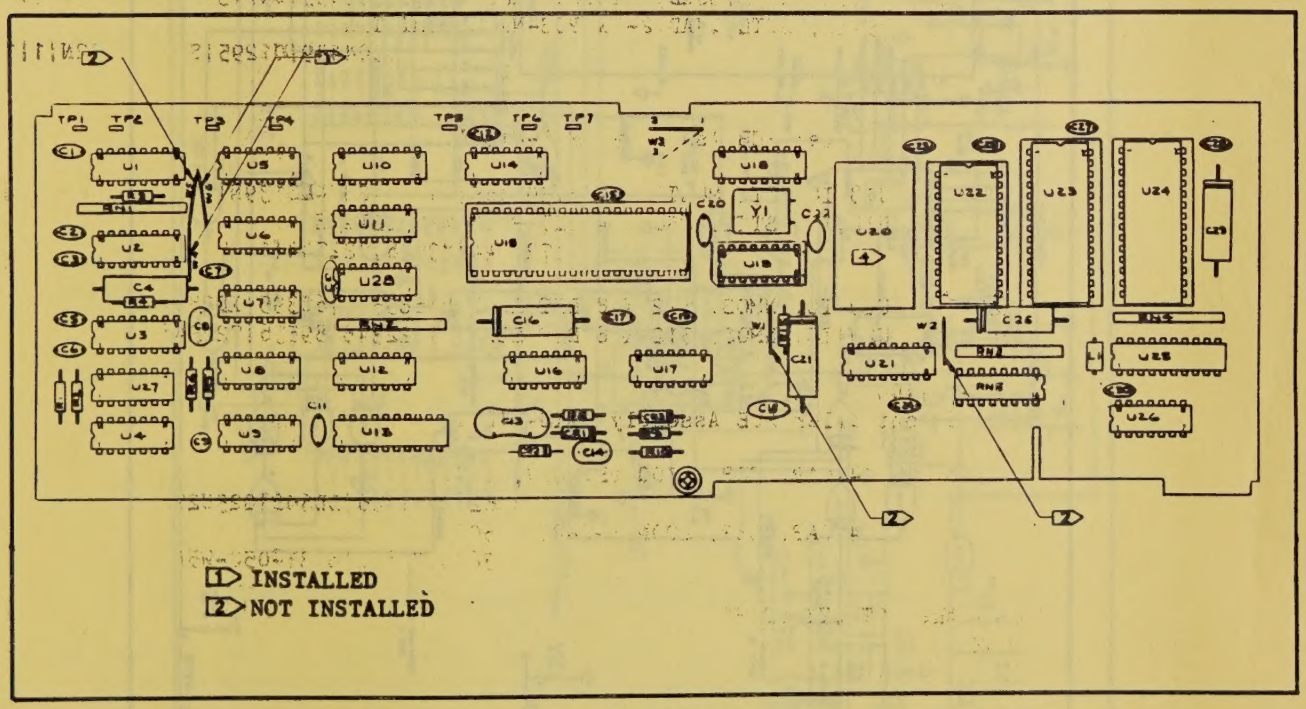

Figure 1.

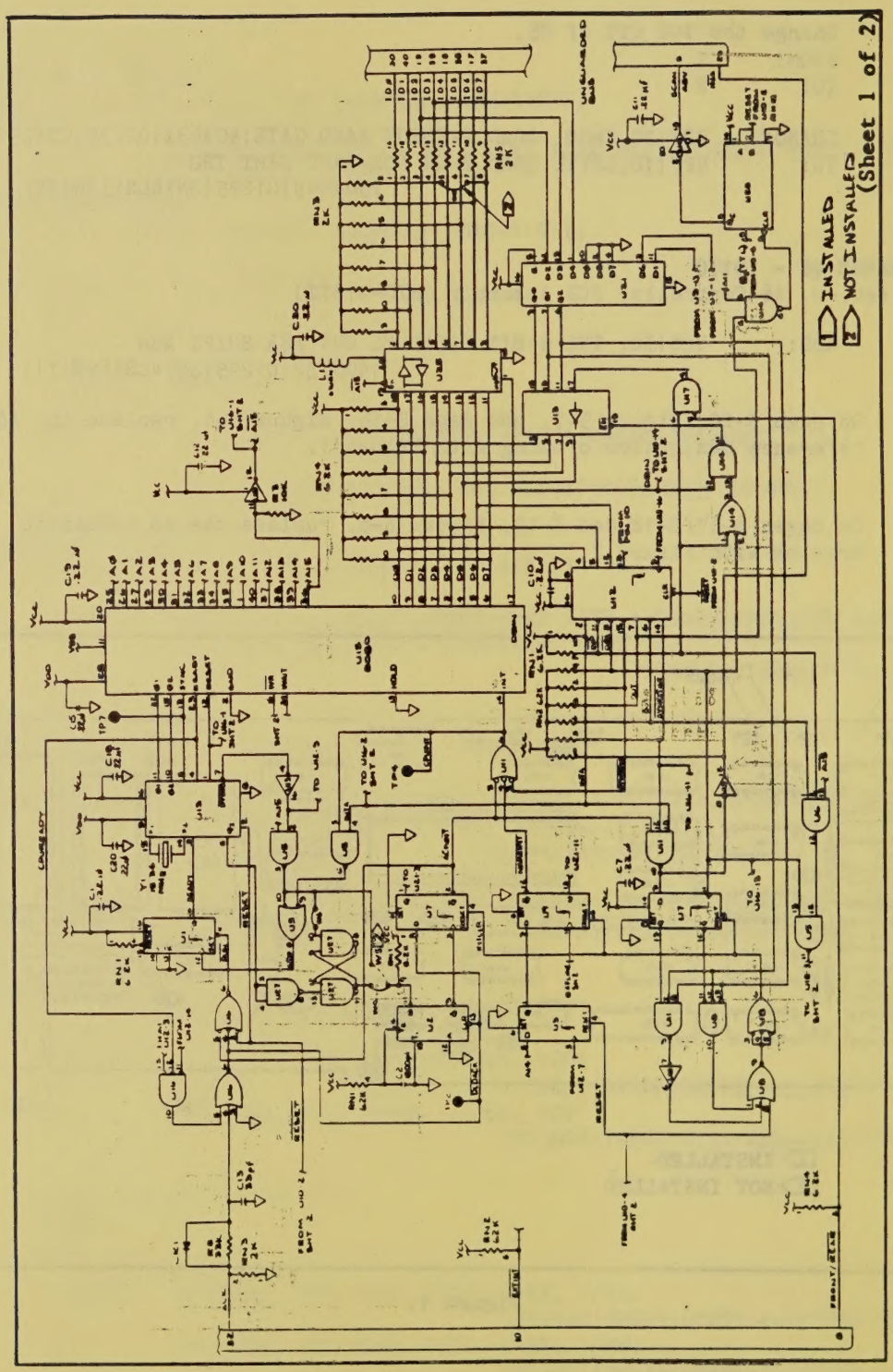

Figure 2.

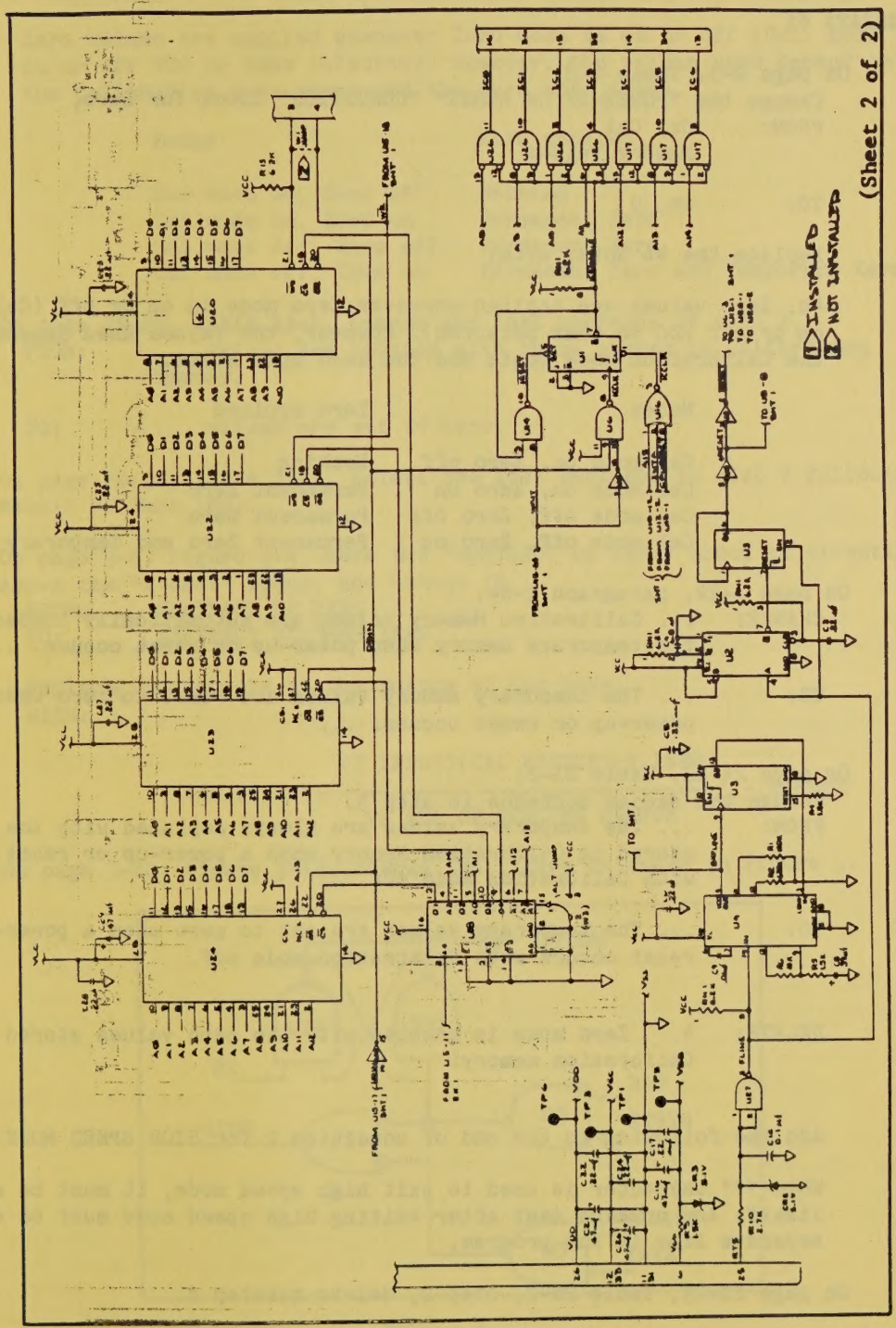

Figure 2. (cont.)

ERRATA #1

On page 2-5, Table 2-2:
Change the "POWER-UP OR RESET" "CONDITION" block for Zero,
FROM: On, Cal
Memory Values

TO: On, 0

Replace the 4b Note, with:

4b. Zero values are applied whenever Zero mode is on or off (Cal. mode on or off VDC or Ohms selected). However, the values used depend on the Calibration mode state and the zero mode state.

Modes	Zero applied
Cal mode on, Zero off	Nothing
Cal mode on, Zero on	Permanent Zero
Cal mode off, Zero off	Permanent Zero
Cal mode off, Zero on	Permanent Zero and Temporary Zero

On page 2-22, paragraph 2-84,
CHANGE: ... Calibration Memory values are automatically loaded into the temporary memory when power-up or reset occurs. ...

TO: ... The temporary memory values are reset to zero when power-up or reset occurs. ...

On page 2A-22, Table 2A-2:
Change the second sentence in step 3,
FROM: ... The temporary values are always replaced with the values stored in Calibration Memory when a power-up or reset occurs with Calibration mode off.

TO: ... The temporary values are set to zero when a power-up or reset occurs with Calibration mode off.

DELETE: 4. Zero mode is enabled with the zero values stored in Calibration memory.

Add the following to the end of condition 2 for HIGH SPEED MODE:

When "*" character is used to exit high speed mode, it must be sent by itself. Any command sent after exiting high speed mode must be on a separate line in the program.

On page 2A-23, Table 2A-2, step 2, delete substep d.

On page 2A-28, Table 2A-2, replace the last paragraph on the page with:

Zero values are applied whenever Zero mode is on or off (Cal. mode on or off VDC or Ohms selected). However, the values used depend on the Calibration mode state and the zero mode state.

Modes	Zero applied
Cal mode on, Zero off	Nothing
Cal mode on, Zero on	Permanent Zero
Cal mode off, Zero off	Permanent Zero
Cal mode off, Zero on	Permanent Zero and Temporary Zero

On page 2A-29, Table 2A-2, change the last sentence of step 2,

FROM: ... values are updated with those stored in Calibration Memory.

TO: ... values are set to zero.

On page 2A-30, Table 2A-2, delete the last sentence in step 2 following Recall DC Zero (GO).

On page 3-4, Figure 3-4, move the "SUBTRACT DC ZERO" block to directly above the "X REF?" block, and change it,

FROM: SUBTRACT DC ZERO

TO: SUBTRACT DC/OHMS ZERO

Replace the formula at the bottom of the page,

WITH:

$$\text{READING} = \frac{(\text{V INPUT})(\text{CAL FACTOR}) - \text{V ZERO}}{\text{Vx REF OR SCALING FACTOR}} - \text{OFFSET}$$

On page 3-10, Figure 3-12, change the figure as shown in Figure 3.

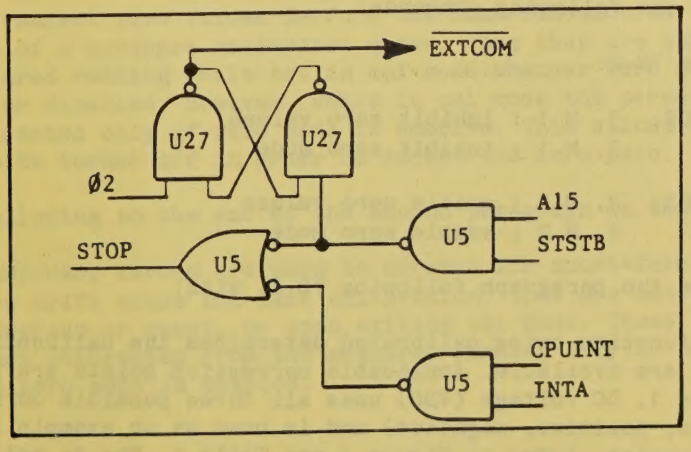

Figure 3.

On page 4-7, Figure 4-2, change the figure as shown in Figure 4.

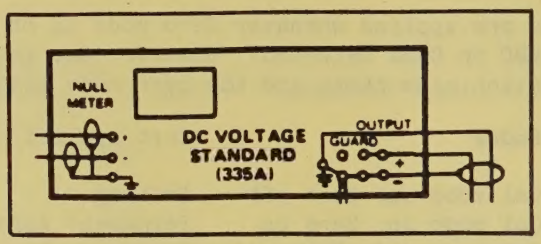

Figure 4.

On page 4-8, Figure 4-4, change the figure as shown in Figure 5.

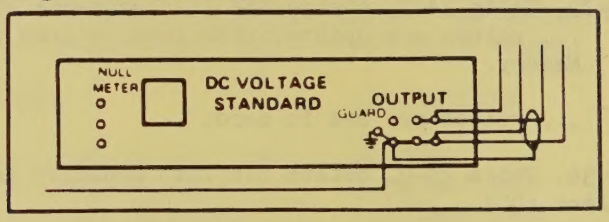

Figure 5.

On page 7B-1:
Add the following sentence between the last two sentences of the paragraph that begins with "Software calibration entails ..."

The gain correction factors are applied to the reading immediately upon entry and continue to be applied whether Calibration mode is on or off.

Replace the paragraph at the bottom of the page with:

Locally, zero mode can be disabled with the Zero button. Remotely, both zero mode and gain correction factors can be inhibited or enabled with the following commands:

On page 7B-2:

CHANGE: 3. M 1 : inhibit zero values
TO: 3. M 1 : inhibit zero mode

CHANGE: 4. M 2 : enable zero values
TO: 4. M 2 : enable zero mode

Replace the paragraph following 7B-2, with:

The function being calibrated determines the calibration corrections that are available. Applicable correction points are summarized in Table 1. DC voltage (VDC) uses all three possible correction points (zero, positive, negative) and is used as an example in the following discussion. Refer to Figure 1 and Table 1. The dc voltage function requires that a zero correction and negative and positive gain corrections be made. These corrections are performed by the reading calculation:

Reading = (Gain correction)(Measured value) - (Zero correction)

Seperate zero corrections can be stored on any range in the dc voltage (VDC) or resistance (OHMS) function. Seperate gain corrections can be stored for every range of every function. (On an 8505A seperate gain corrections can be stored for option -09 RMS AC converter and option -01 averaging AC converter.) In dc volts and dc amps seperate gain corrections can be stored for positive and negative inputs. Gain correction are calculated by the multimeter as follows:

$$\text{Gain correction} = \frac{\text{(Source applied) + (Zero correction)}}{\text{(Measured Value)}}$$

On page 7B-3, replace the paragraph that begins "For example,..", with:

For example, assume the 2V dc range is being calibrated. VDC zero (point A in Figure 1) is first measured as follows. Zero is turned off. The multimeter inputs are shorted and a reading is taken. The displaced reading, 0.000032V is stored as zero correction. The positive gain correction is then defined using any reference value from 600 mV (60% of range) to 2V (full scale). A value of 1.9V (point B in Figure 1) is selected in this case to minimize percentage of reading error and avoid saturation of the A/D converter.

The multimeter measures 1.987282V and displays 1.987250V = 1.987282V - 0.000032V. The gain correction is therefore computed as:

$$\text{Gain correction} = \frac{\text{(Source Applied) + (Zero correction)}}{\text{(Measured Value)}} = \frac{1.9 + 0.000032}{1.987282}$$

On page 7B-7:
Add the following to the end of the first paragraph on the page.

These permanent zero values perform the same function as tweaking a zero pot of a hardware calibrated meter. Thus they are subtracted from the measured reading while not in cal mode whether zero mode is enabled or disabled. However, while in cal mode the permanent zeroes are subtracted only if zero mode is enabled. This allows the permanent zeros to be turned off in order to adjust the zero pots.

Add the following to the end of the second paragraph on the page.

These temporary zeroes are used to correct for short-term zero errors, i.e. zero drift since the last calibration. They are set to zero upon meter power-up or reset, or upon exiting cal mode. These temporary zeroes are subtracted from the measured reading only if not in cal mode and zero mode is enabled.

The effect of this is as follows. Zero corrections made while in cal mode (whether by tweaking zero pots and/or storing zero values) are always applied while not in cal mode. In addition, temporary zero corrections may optionally be applied to correct for zero changes since the last calibration.

On page 7B-8:
Replace the paragraph that begins "This operation can ...", with:

This operation can be repeated for each range and does not affect either the stored zero value(s) or the zero mode status. If the multimeter is in VDC or OHMS, one zero value for the range and function selected is recalled. If in cal mode, the permanent zero value is recalled. If not is cal mode, the temporary zero value is recalled. If the multimeter is not in VDC or OHMS, an Error 0 condition is set.

DELETE: "The value recalled may be either of the following:", and the two steps that follow.

On page 7B-11:
DELETE: a. If temporary zero ...

CHANGE: b. Application of all zero ...
TO: a. Application of all zero ...

CHANGE: c. New zero values ...
TO: b. New zero values ...

ERRATA #2

On page 5-23, Table 5-9, change the TOT QTY for CR5,
FROM: 1
TO: 2

ERRATA #3

On page 602A-16, Figure 602A-9, change the values of both C9 and C10,
FROM: .002 uF
TO: .01 uF

ERRATA #4

On page 8-23, Figure 8-8, replace the BINDING POST INPUT table with Table 1 and change the values of R48 and R49 accordingly,

FROM: 2.5V and 312.5 mV
TO: 2V and 200 mV

CHANGE #7 - 17601
Rev.-B, A2 Motherboard PCB Assembly (8505A-4002T)

On page 5-10, Table 5-3:

```
CHANGE:  S1|SWITCH, SLIDE|697446|89536|697446|1|1
TO:      S1|SWITCH, SLIDE|453365|89536|453365|1|1
```

On page 8-9/8-10, Figure 8-2, change the schematic as shown in Figure 7.

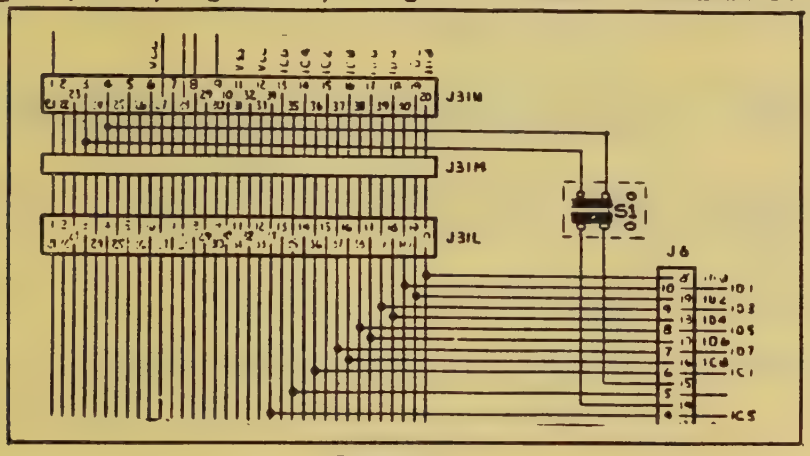

Figure 7.

CHANGE #8 - 17895
Rev.-C, A1 Front Panel Display Assembly (8505A-4001T)

On page 5-7, Table 5-2, make the following changes:

```
CHANGE:  J1|BINDING POST, RED|275552|32767|820-65|2
TO:      J1|BINDING POST, RED|637843|89536|637843|2

CHANGE:  J2|BINDING POST, RED|275552|32767|820-65|REF
TO:      J2|BINDING POST, RED|637843|89536|637843|REF

CHANGE:  J3|BINDING POST, BLACK|275560|32767|820-45|2
TO:      J3|BINDING POST, BLACK|275560|89536|275560|2

CHANGE:  J4|BINDING POST, BLACK|275560|32767|820-45|REF
TO:      J4|BINDING POST, BLACK|275560|89536|275560|REF

CHANGE:  J5|BINDING POST, BLUE|275578|32767|820-55|1
TO:      J5|BINDING POST, BLUE|637876|89536|637876|1
```

CHANGE #9 - 18005
Rev.-B, A4 Power Supply PCB Assembly (8505A-4051T)

On page 5-14, Table 5-5:

```
CHANGE:  S2|SWITCH, POWER DPDT|291526|89536|291526|1|1
TO:      S2|SWITCH, ON-OFF    |453605|89536|453605|1|1
```

CHANGE #10 - 18059
Rev.-B, -02A Ohms Converter PCB Assembly (8505A-4110T)

On page 602A-11, Table 602A-9:
ADD: C24|CAP, CER, 0.1 UF +80/-20%, 500V|105684|56289|41C92|1

CHANGE #9 - 18067
Rev.-S, -03 Current Shunts Assembly (MIS-4104T)

On page 603-11, Table 603-5:
CHANGE: R74|RES,DEP.CAR,6.8K +/-5%,1/4W|368761|80031|CR251-4-5P6K8|1
TO: R74|RES,DEP.CAR,6.8K +/-5%,1/4W|376632|80031|CR251-4-5P68K|1

On page 603-13/603-14, Figure 603-3, change the value of R74,
FROM: 6.8K
TO: 68K

ERRATA #5

On page 609A-16, Figure 609A-3, change NOTE 5 to read:

5. If Q1, Q8, Q12 or any OP-AMP (U3-U8) is replaced it will be necessary to TC the module.

CHANGE #12 - 18318
Rev.-T, -09A RMS Converter PCB Assembly (MIS-4103T)

On page 609A-12, Table 609A-6:
CHANGE: Q2|XSTR,FET,N-CHANNEL|343103|89536|343103|3|1
TO: Q2|TRANSISTOR,FET |477448|89536|477448|3|1

CHANGE: Q6,Q7|XSTR,FET,N-CHANNEL|343103|89536|343103|REF
TO: Q6,Q7|TRANSISTOR,FET |477448|89536|477448|REF

CHANGE #13 - 18385
Rev.-U, -09A RMS Converter PCB Assembly (MIS-4103T)

On page 609A-10, Table 609A-6:
CHANGE: CR6,CR7|DIODE,SI,LO-CAP,LO-LEAKAGE|375907|07263|FD7222|4|1
TO: CR6,CR7|DIODE,SI,LO-CAP,LO-LEAKAGE|348177|07263|FD7223|4|1

CHANGE: CR20|DIODE,SI,LO-CAP,LO-LEAKAGE|375907|07263|FD7222|REF
TO: CR20|DIODE,SI,LO-CAP,LO-LEAKAGE|348177|07263|FD7223|REF

CHANGE: CR25|DIODE,SI,LO-CAP,LO-LEAKAGE|375907|07263|FD7222|REF
TO: CR25|DIODE,SI,LO-CAP,LO-LEAKAGE|348177|07263|FD7223|REF

CHANGE #14 - 18399
Rev.-R A10A1 A/D Analog PCB Assembly (MIS-4140)

On page 5-31, Table 5-12:

CHANGE:	C18	CAP,TA,68 UF +/-20%,25V	446450	56289	196D686X0025TE4	1
TO:	C18	CAP,AL,33 UF +/-20%,25V	715250	89536	715250	1

On page 8-27, Figure 8-10, change the value of C18,
FROM: 68 uF
TO: 33 uF

CHANGE #15 - 18400
Rev.-G, A10A2 Fast R2 A/D Converter Digital PCB Assembly (MIS-4141)

On page 5-25, Table 5-13:

CHANGE:	C1	CAP,TA,220 UF +/-20%,6V	408682	56289	196D227X0006TE4	2
TO:	C1	CAP,AL,33 UF +/-20%,25V	715250	89536	715250	2
CHANGE:	C4	CAP,TA,220 UF +/-20%,6V	408682	56289	196D227X0006TE4	REF
TO:	C4	CAP,AL,33 UF +/-20%,25V	715250	89536	715250	REF

On page 8-29/8-30, Figure 8-11, change the values of C1 and C4,
FROM: 220 uF
TO: 33 uF

CHANGE #16 - 18412
Rev.-C, A4 Power Supply PCB Assembly (8505A-4051T)

On page 5-13, Table 5-5:

CHANGE:	C9	CAP,TA,5.6 UF +/-20%,25V	368969	56289	196D565X0025KA1	4
TO:	C9	CAP,ELECT,4.7 UF +/-20%,25V	603993	89536	603993	4
CHANGE:	C10	CAP,TA,5.6 UF +/-20%,25V	368969	56289	196D565X0025KA1	REF
TO:	C10	CAP,ELECT,4.7 UF +/-20%,25V	603993	89536	603993	REF
CHANGE:	C11	CAP,TA,5.6 UF +/-20%,25V	368969	56289	196D565X0025KA1	REF
TO:	C11	CAP,ELECT,4.7 UF +/-20%,25V	603993	89536	603993	REF
CHANGE:	C17	CAP,TA,5.6 UF +/-20%,25V	368969	56289	196D565X0025KA1	REF
TO:	C17	CAP,ELECT,4.7 UF +/-20%,25V	603993	89536	603993	REF
CHANGE:	C18	CAP,TA,1 UF +/-20%,35V	161919	56289	196D010X0035G	3
TO:	C18	CAP,ELECT,2.2 UF +/-20%,50V	614875	89536	614875	3
CHANGE:	C19	CAP,TA,1 UF +/-20%,35V	161919	56289	196D010X0035G	REF
TO:	C19	CAP,ELECT,2.2 UF +/-20%,50V	614875	89536	614875	REF
CHANGE:	C20	CAP,TA,1 UF +/-20%,35V	161919	56289	196D010X0035G	REF
TO:	C20	CAP,ELECT,2.2 UF +/-20%,50V	614875	89536	614875	REF

On page 8-13/8-14, Figure 8-4:
Change the values of C9,C10,C11 and C17,
FROM: 5.6 uF
TO: 4.7 uF

Change the values of C18, C19 and C20,
FROM: 1 uF 35V
TO: 2.2 uF 50V

ERRATA #6

On page 8-27, Figure 8-10, reverse the polarity of C18.

CHANGE #17 - 18985
Rev.-D, -02A Ohms Converter PCB Assembly (8505A-4110)

On page 602A-11, Table 602A-9:
DELETE: C24|.....

ERRATA #7

On page 8-29/8-30, Figure 8-11, change the figure as shown in Figure 8.

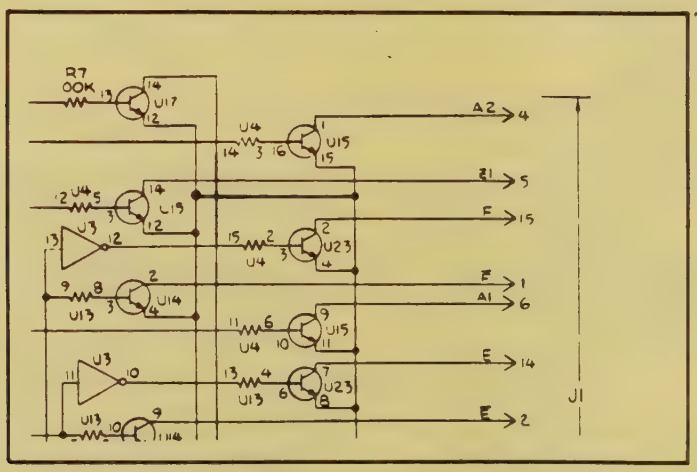

Figure 8.

CHANGE #18 - 19001
Rev.-C, A8 DC Signal Conditioner PCB Assembly (8505A-4100)

On pages 5-23, Table 5-9, make the following changes:

CHANGE: C1|CAP, TA, 5.6 UF +/-20%, 25V|368969|56289|196D565X0025KA1|2
TO: C1|CAP, TA, 4.7 UF +/-20%, 25V|161943|56289|196D475X0025KA1|4

CHANGE: C2|CAP,TA,5.6 UF +/-20%,25V|368969|56289|196D565X0025KA1|REF
TO: C2|CAP,TA,4.7 UF +/-20%,25V|161943|56289|196D475X0025KA1|REF

CHANGE: C3|CAP,CER,0.22UF+/-20%,50V|309849|72982|8131-050-651-220NM|2
TO: C3|CAP,TA,4.7 UF +/-20%,25V|161943|56289|196D475X0025KA1 |REF

```
CHANGE:  C4|CAP,CER,0.22UF+/-20%,50V|309849|72982|8131-050-651-220NM|REF
TO:      C4|CAP,TA,4.7 UF +/-20%,25V|161943|56289|196D475X0025KA1   |REF

Change the TOT QTY of CR1,
FROM:    2
TO:      4

ADD:     CR7,8|DIODE, SI, HI SPEED SWITCHING|203323|07910|1N4448|2

CHANGE:  K1|RELAY, ARMATURE|515437|89536|515437|2
TO:      K1|RELAY, DS4E    |715078|89536|715078|2

CHANGE:  K2|RELAY, ARMATURE|515437|89536|515437|REF
TO:      K2|RELAY, DS4E    |715078|89536|715078|REF

CHANGE:  Q1|TRANSISTOR, NPN, SI|330803|07263|MPS6560|2 |1
TO:      Q1|TRANSISTOR, NPN, SI|218396|04713|2N3904 |13|3

CHANGE:  Q3||TRANSISTOR, NPN, SI|330803|07263|MPS6560|REF
TO:      Q3|TRANSISTOR, NPN, SI |218396|04713|2N3904 |REF

Change the TOT QTY and REC QTY of Q7,
FROM:    11 |1
TO:      REF|0

CHANGE:  R2|RES,MTL.FILM,28.0K +/-1%,1/8W|291385|91637|CMF552802F|2
TO:      R2|RES,DEP.CAR, 1.5K +/-5%, 1/4W|343418|80031|CR251-4-5P1K5|4

CHANGE:  R3|RES,MTL.FILM,28.0K +/-1%,1/8W|291385|91637|CMF552802F|REF
TO:      R3|RES,DEP.CAR,1.5K +/-5%,1/4W|343418|80031|CR251-4-5P1K5|REF

DELETE:  R4|........

Change the TOT QTY of R5,
FROM:    2
TO:      1

ADD:     R14|RES,MTL.FILM,28.0K +/-1%,1/8W|291385|91637|CMF552802F|2

CHANGE:  R18|RES,MTL.FILM,21K,+/-1%,1/8W|441212|91637|CMF552102F  |REF
TO:      R18|RES,DEP.CAR,1.5K+/-5%,1/4W|343418|80031|CR251-4-5P1K5|REF

CHANGE:  R19|RES,MTL.FILM,17.8K +/-1%,1/8W|349183|91637|CMF551782F|REF
TO:      R19|RES,DEP.CAR,1.5K+/-5%,1/4W|343418|80031|CR251-4-5P1K5|REF

ADD:     R20|RES,MTL.FILM,28.0K +/-1%,1/8W|291385|91637|CMF552802F|REF
```

On page 5-26, Figure 5-9, and page 8-22, Figure 8-8, replace the PCB reference designator drawing with Figure 9.

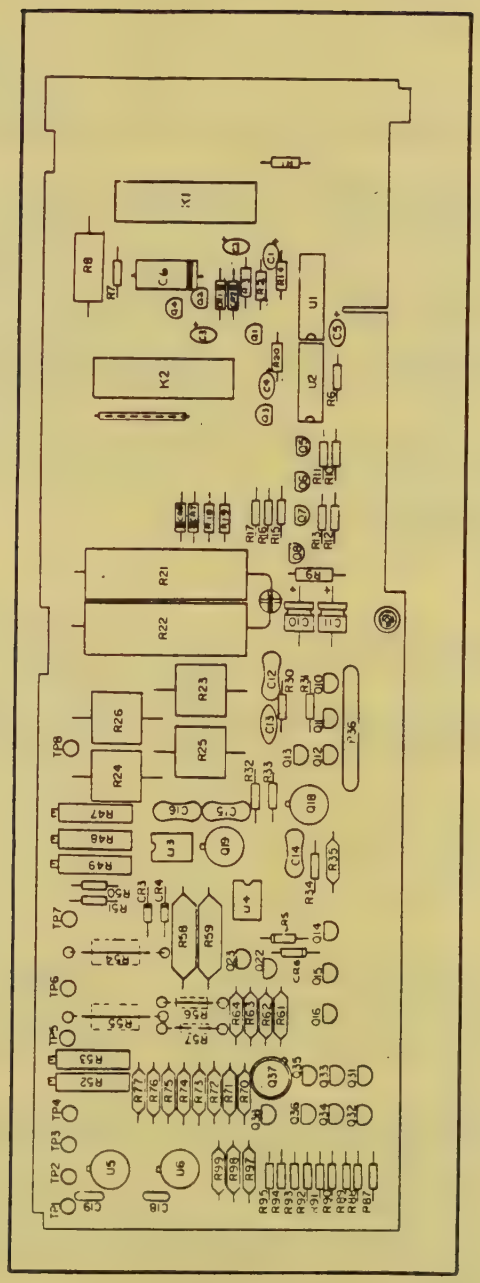

Figure 9.

On page 8-23, Figure 8-8, replace the schematic drawing with Figure 10.

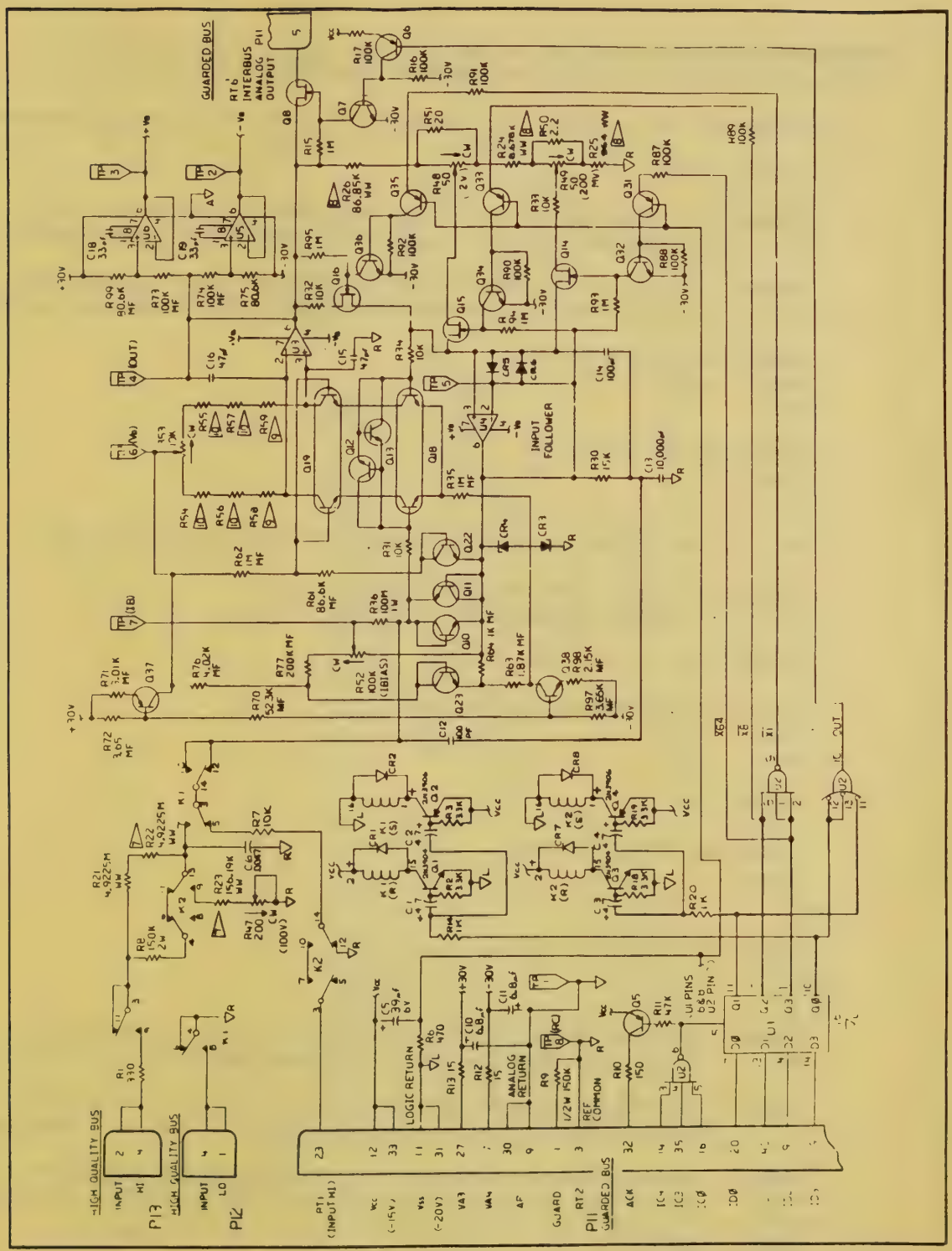
GUARDED BUS
INTERBUS ANALOG OUTPUT
INPUT FOLLOWER
LOGIC RETURN
ANALOG RETURN
REF COMMON
HIGH QUALITY BUS
INPUT HI
INPUT LO
GUARDED BUS

Figure 10.

CHANGE #19 - 19044

Rev.-E, -02A Ohms Converter PCB Assembly (8505A-4110)

On pages 602A-11 thru 602A-14, Table 602A-9, make the following changes:

```
DELETE:  C16|....

CHANGE:  C17|CAP,CER,0.22 UF +/-20%, 50V|309849|71590|CW3C0C224K|3
TO:      C17|CAP,TANT,4.7 UF +/-20%, 25V|161943|56289|196D475X0025KA1|2

CHANGE:  C21|CAP,CER,0.22 UF +/-20%, 50V|309849|71590|CW3C0C224K|REF
TO:      C21|CAP,TANT,4.7 UF+/-20%,25V|161943|56289|196D475X0025KA1|REF

Change the TOT QTY of C23,
FROM:    REF
TO:      2

Change the TOT QTY of CR1,
FROM:    6
TO:      7

ADD:     CR21|DIODE,SI,HI-SPEED SWITCHING|203323|07910|1N4448|REF

CHANGE:  K1|RELAY, ARMATURE|515429|89536|515429|1
TO:      K1|RELAY, ARMATURE|715078|89536|715078|1

DELETE:  Q10|....

Change the TOT QTY and REC QTY of Q11,
FROM:    REF|
TO:      4  |1

DELETE:  Q40|....

Change the TOT QTY of R46,
FROM:    1
TO:      3

Change the TOT QTY of R58,
FROM:    2
TO:      3

CHANGE:  R63|RES,MTL.FILM,15.8K +/-1%,1/8W|293688|91637|CMF551582F|1
TO:      R63|RES,DEP.CAR,1K +/-5%, 1/4W|343426|80031|CR251-4-5P1K|REF

CHANGE:  R64|RES,MTL.FILM,73.2K +/-1%,1/8W|237222|91637|CMF557322F|1
TO:      R64|RES,DEP.CAR,3.3K +/-5%,1/4W|348813|80031|CR251-4-5P3K3|REF

CHANGE:  R65|RES,MTL.FILM,30.1K +/-1%,1/8W|168286|91637|CMF553012F|1
TO:      R65|RES,DEP.CAR,3.3K +/-5%,1/4W|348813|80031|CR251-4-5P3K3|REF

DELETE:  R67|....
DELETE:  R68|....

ADD:     VR1|VARISTOR, 5V|715052|89536|715052|1
```

On page 602A-15, Figure 602A-4, replace the reference designator drawing with Figure 11.

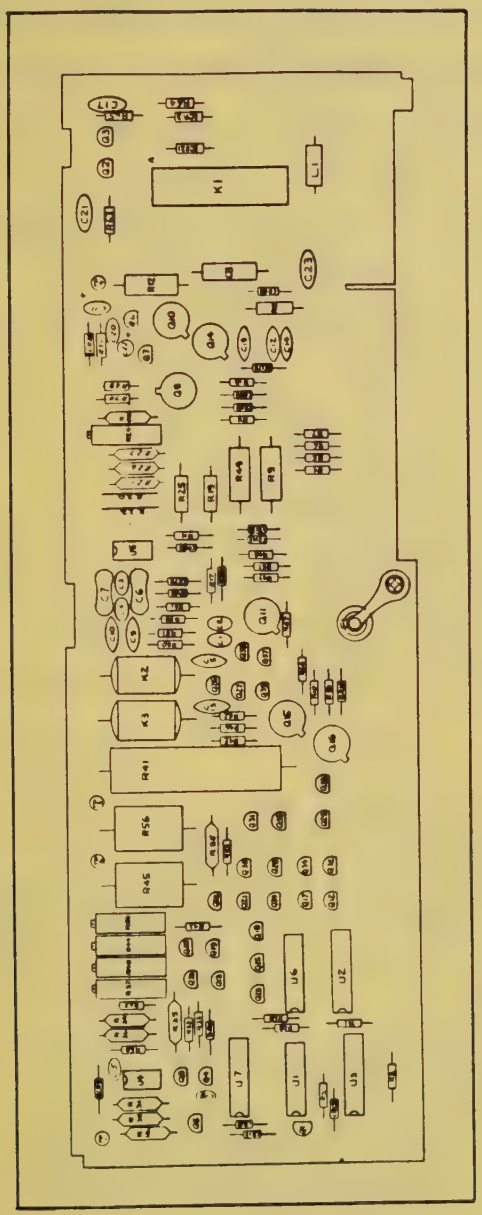

Figure 11.

On page 602A-16, Figure 602A-9, replace the schematic with Figure 12.

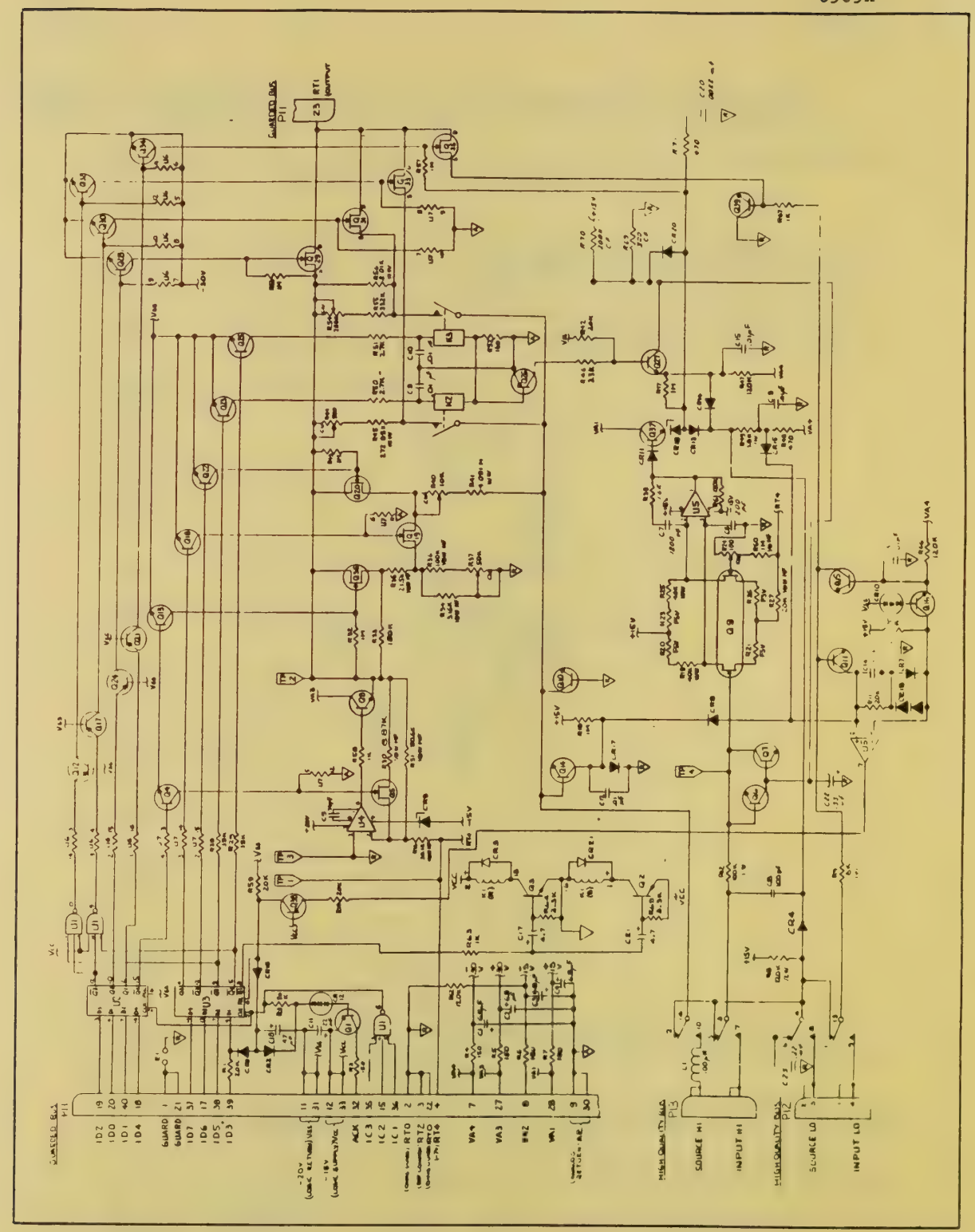

Figure 12.

CHANGE #20 - 19273
Rev.-S A10A1 A/D Analog PCB Assembly (MIS-4140)

On page 5-33, Table 5-12:
ADD: R70,R71|RES.DEP.CAR,10K+/-5%,1/8W|348839|80031|CR251-4-5P10K|1

On page 5-34, Figure 5-12, add R70 and R71 as shown in Figure 13.

On page 8-27, Figure 8-10, add R70 and R71 as shown in Figure 14.

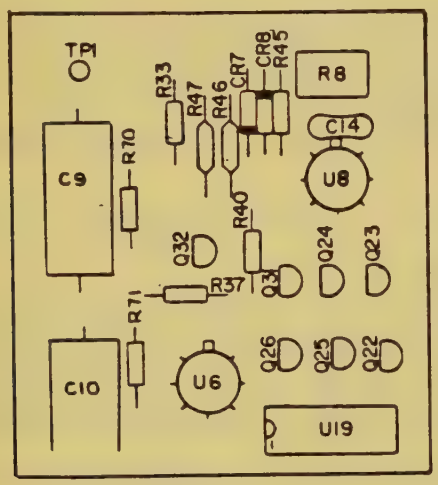

Figure 13.

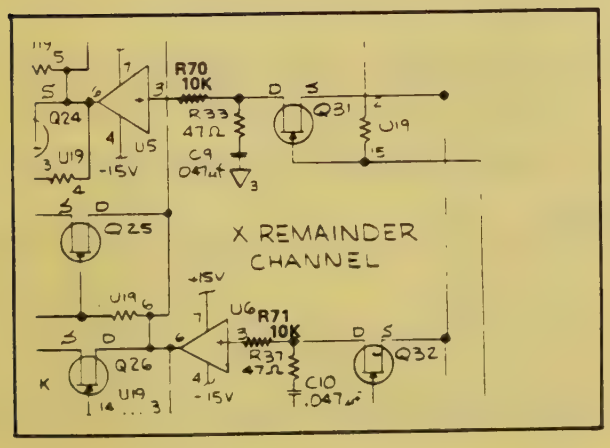

Figure 14.

CHANGE #21 - 19475
Rev.-E, A4 Power Supply PCB Assembly (8505A-4051T)

On page 5-7, Table 5-2:

CHANGE:	F1	FUSE, FAST ACTING 1-1/2 AMP	109330	71400	AGC1-1/2	1 | 5
TO:	F1	FUSE, FAST ACTING 1-1/2 AMP	739888	89536	739888	1 | 5

Rev.-C, A7 Front/Rear Switch PCB Assembly (8505A-4005)

On page 5-21, Table 5-8:

CHANGE:	F3	FUSE, FAST ACTING 1-1/2 AMP	109330	71400	AGC1-1/2	1 | 5
TO:	F3	FUSE, FAST ACTING 1-1/2 AMP	739888	89536	739888	1 | 5

CHANGE #22 - 19521
Rev.-L, A6 Controller PCB Assembly (MIS-4187T)

On page 5-19, Table 5-7:

ADD:	W4,W6	TEFLON WIRE JUMPER	484311	89536	484311	2

CHANGE #23 - 19838
Rev.-H, A10A2 Fast R2 A/D Converter Digital PCB Assembly (MIS-4141)

On page 5-35, Table 5-13:

CHANGE:	C1	CAP,AL,33 UF +/-20%,25V	715250	89536	715250	2
TO:	C1	CAP,AL,47 UF +/-20%,25V	697052	89536	697052	2
CHANGE:	C4	CAP,AL,33 UF +/-20%,25V	715250	89536	715250	REF
TO:	C4	CAP,AL,47 UF +/-20%,25V	697052	89536	697052	REF

On page 8-29/8-30, Figure 8-11, change the values of C1 and C4,
FROM: 33 uF
TO: 47 uF

CHANGE #24 - 19841
Rev.-T, A10A1 A/D Analog PCB Assembly (MIS-4140)

On page 5-31, Table 5-12:

CHANGE:	MP1	SOCKET,COMP.LEAD	343285	00779	2-331272-6	4
TO:	MP1	SOCKET,COMP.LEAD	376418	89536	376418	4

On page 5-34, Figure 5-12, swap the positions of C18 and C20.

CHANGE #25 - 19864
Rev.-D A8 DC Signal Conditioner PCB Assembly (8505A-4100)

On page 5-24, Table 5-9:

ADD:	C20	CAP,MICA, 680 PF +/-5%, 500V	148403	14655	CD19FD681J0	1
CHANGE:	R7	RES,DEP.CAR,10K +/-5%, 1/4W	348839	80031	CR251-4-5P10K	5
TO:	R7	RES,DEP.CAR,2.7K +/-5%,1/4W	386490	80031	CR251-4-5P2K7	1

Change the TOT QTY of R31,
FROM: REF
TO: 4

CHANGE #26 - 19912

Rev.-F, -02A Ohms Converter PCB Assembly (8505A-4110)

On pages 602A-11 thru 602A-14, Table 602A-9:

ADD: C24|CAP ELECT, 470 UF|407030|89536|407030|1

Change the TOT QTY of CR1,
FROM: 7
TO: 8

ADD: CR22|DIODE,ZENER,13.0V, +/-5%|110726|04713|1N964B|1

ADD: CR23|DIODE, SI, HI-SPEED SWITCHING|203323|07910|1N4448|REF

ADD: Q41|TRANSISTOR, SI, SMALL SIGNAL|524140|04713|MPS-A63|1

Change the TOT QTY of R46,
FROM: 3
TO: 4

Change the TOT QTY of R58,
FROM: 3
TO: 4

ADD: R72|RES,DEP.CAR,1K +/-5%, 1/4|343426|80031|CR251-4-5P1K|REF

ADD: R73|RES,DEP.CAR,3.3K +/-5%, 1/4|348813|80031|CR251-4-5P3K3|REF

ERRATA #8

On page 8-7, Figure 8-1, change the schematic as shown in Figure 15.

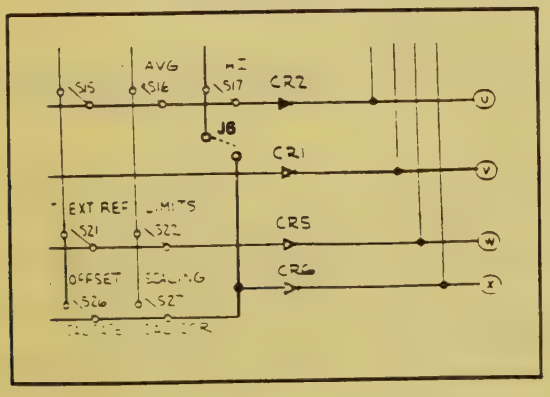

Figure 15.

CHANGE #27 - 20009

Rev.-G, -02A Ohms Converter PCB Assembly (8505A-4110)

On pages 602A-11 thru 602A-14, Table 602A-9:

ADD: C25|CAP,ELECT 33 UF|715250|89536|715250|1

CHANGE: C24|CAP ELECT, 470 UF|407030|89536|407030|1
TO: C24|CAP ELECT, 220 UF|369181|89536|369818|1

Change the TOT QTY of CR1,
FROM: 8
TO: 9

ADD: CR24|DIODE, SI, HI-SPEED SWITCHING|203323|07910|1N4448|REF

Change the TOT QTY of R46,
FROM: 4
TO: 3

DELETE: R74|....

ERRATA #9

On page 4-4, paragraph 4-14, delete the second to the last sentence in the NOTE.

On page 602A-1, paragraph 602A-6, change the last sentence to read:

The NOTE following paragraph 4-14 lists some possible installation slots.

ERRATA #10

On page 603-10, Table 603-5:

DELETE: Q3|DIODE, HI SPEED SWITCHING|203323|07910|1N4448|REF

ERRATA #11

On page 4-9, paragraph 4-47, step 6, change the last sentence to read:

Verify that this reading is 0.09091 +/- (56 ppm + 16 digits).

On page 603-6, Table 603-2, make the following changes:

CHANGE:	100 uA	250 uA	249.915 (-6)	250.085 (-6)
TO:				
CHANGE:	100 mA	150 mA	149.905(-3)	150.095(-3)
TO:	100 mA	120 mA	149.905(-3)	150.095(-3)

ERRATA #12

On pages 4-15 through 4-19, Table 4-6, make the following changes:

Step 6, FROM: Remove Bus Interconnect (or Isolator if installed).
TO: Remove Isolator.

Step 8, FROM: Was the isolator installed?
TO: Is "CXXXX" (Interface option) and then "ERROR 9" displayed?

Step 9, FROM: ... Is HI-Y.Y.Y displayed?
TO: ... Is HI-Y.Y.Y, CXXXX, 0.000 displayed?

Steps 13 and 14,
CHANGE: ... Cal Memory ...
TO: ... Cal Memory Chip ...

Step 15, FROM: Bad Cal Memory.
TO: Bad Cal Memory Chip. Replace EEROM.

Step 26, CHANGE: ... Cal Memory ...
TO: ... Cal Memory Chip ...

Steps 44 and 45,
CHANGE: ... Cal Memory ...
TO: ... Cal Memory Chip ...

Steps 80, 81 and 82,
CHANGE: ... Cal Memory ...
TO: ... Cal Memory Chip ...

ERRATA #13

On page 607-12, Table 607-8, make the following changes:

CHANGE: |DR11C, LN1 PERSONALITY CARD PCB ASSY|523043|89536|523043
TO: -07A|DR11C, LN1 PERSONALITY CARD PCB ASSY|523043|89536|523043

CHANGE: |DR11-C, NH1 PERSONALITY CARD PCB ASSY|523068|89536|523068
TO: -07L|DR11-C, NH1 PERSONALITY CARD PCB ASSY|523068|89536|523068

CHANGE: |PC11 PERSONALITY CARD PCB ASSY|449447|89536|449447
TO: -07B|PC11 PERSONALITY CARD PCB ASSY|449447|89536|449447

CHANGE: |SFH PERSONALITY CARD PCB ASSY|449454|89536|449454
TO: -07C|SFH PERSONALITY CARD PCB ASSY|449454|89536|449454
(DISCONTINUED OPTION)

CHANGE: |GP PERSONALITY CARD PCB ASSY|449462|89536|449462
TO: -07D|GP PERSONALITY CARD PCB ASSY|449462|89536|449462

CHANGE: |HP PERSONALITY CARD PCB ASSEMBLY|476218|89536|476218
TO: -07H|HP PERSONALITY CARD PCB ASSEMBLY|476218|89536|476218

Following page 607-14, add the personality card schematics to Figure 607-5 as shown in Figure 16.

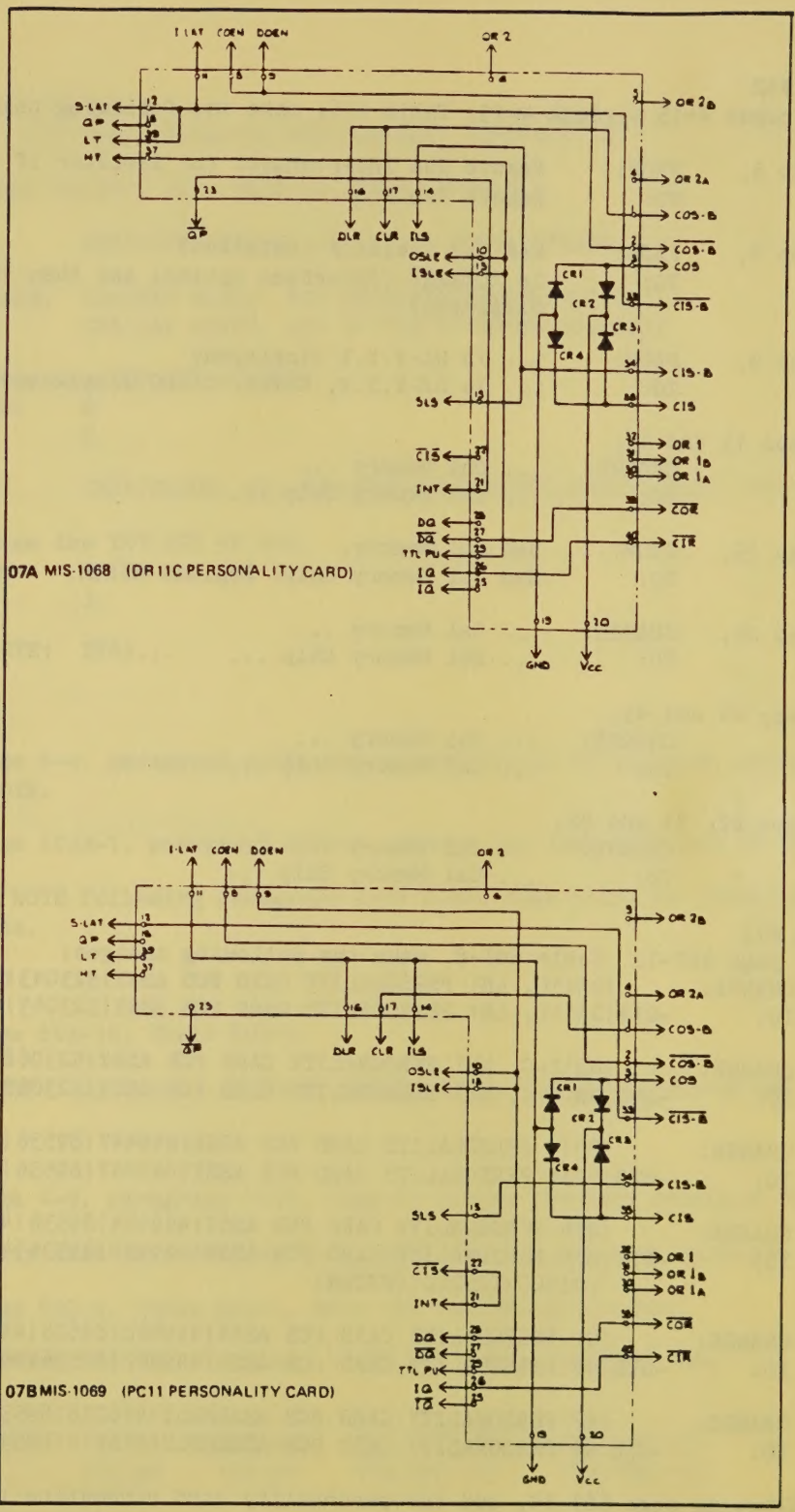
07A MIS-1068 (DR11C PERSONALITY CARD)
07B MIS-1069 (PC11 PERSONALITY CARD)
I LAT
CDEN
DDEN
OR 2
S-LAT
QP
LT
MT
DLR
CLR
ILS
OSLE
ISLE
SLS
INT
DQ
TTL PU
IQ
GND
Vcc
CR1
CR2
CR3
CR4
OR 2B
OR 2A
OR 1
OR 1B
OR 1A

Figure 16.

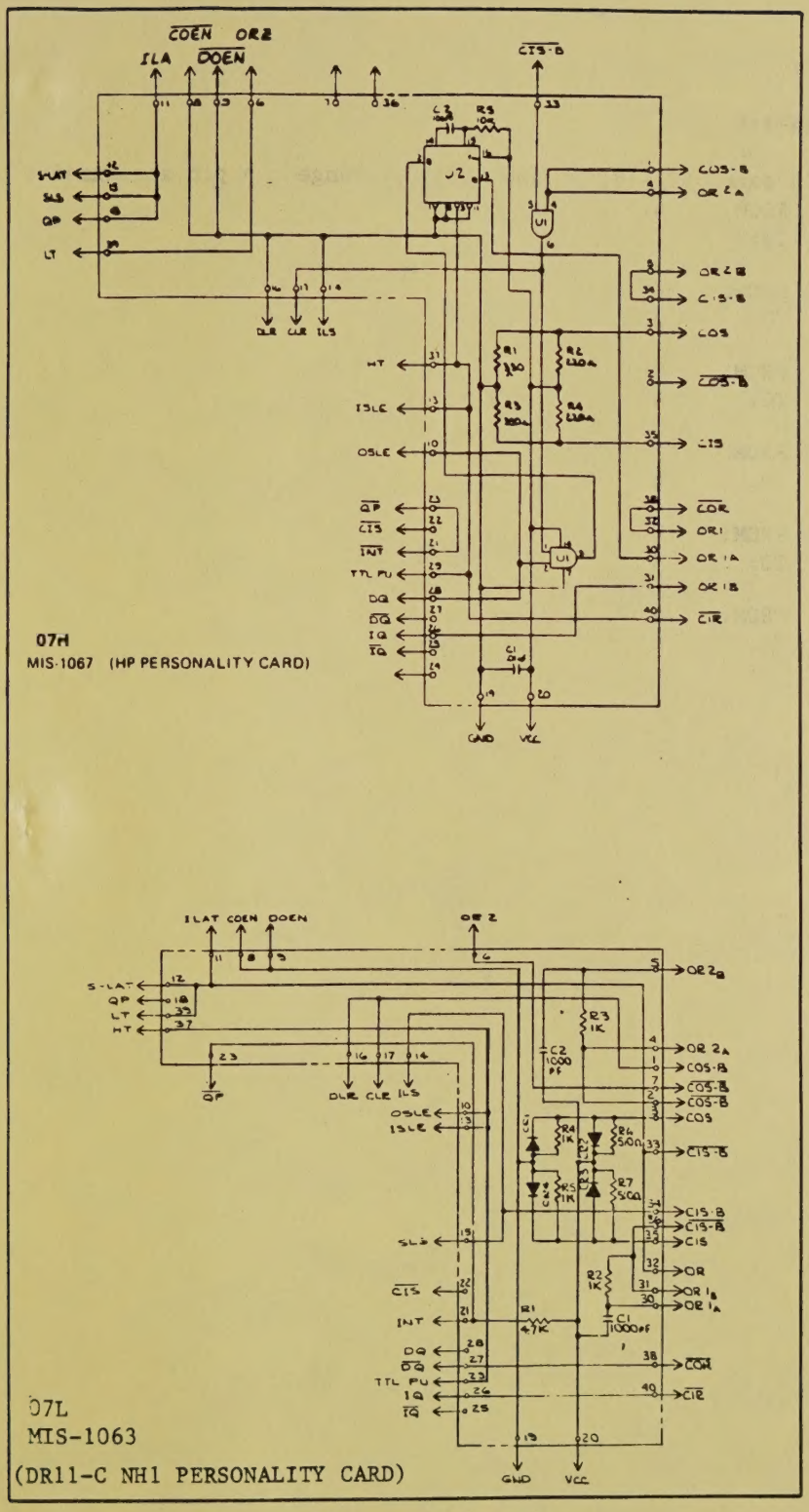

Figure 16. (cont)

ERRATA #14

On page 602A-16, Figure 602A-9, change the pin assignments under K1,

FROM: 4
TO: 7

FROM: 5
TO: 8

FROM: 6
TO: 9

FROM: 7
TO: 4

FROM: 8
TO: 5

FROM: 9
TO: 6